

SUB What is claimed:

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1. A method for reducing  $\beta$ -cell dysfunction in an individual with a pancreatic disorder, comprising:
    - (a) introducing a nucleic acid molecule encoding an inhibitor of IL-1  $\beta$  into a  $\beta$  cell; and
    - (b) transplanting the  $\beta$  cell of step (a) into the individual so as to reduce  $\beta$  cell dysfunction.
  2. The method of claim 1 wherein the inhibitor of IL-1  $\beta$  activity is an interleukin-1 receptor antagonist protein.
  3. The method of claim 1 wherein the inhibitor of IL-1  $\beta$  activity is an NF- $\kappa$ B inhibitor.
  4. The method of claim 1 wherein the inhibitor of IL-1  $\beta$  is an insulin like growth factor-1.
  5. A method for reducing Fas mediated  $\beta$ -cell apoptosis in an individual with a pancreatic disorder, comprising:

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cont.
- (a) introducing a nucleic acid molecule encoding an inhibitor of Fas mediated apoptosis into a  $\beta$  cell; and
  - (b) transplanting the  $\beta$  cell of step (a) into the individual so as to reduce  $\beta$  cell apoptosis.

6. The method of claim 5 wherein the inhibitor of Fas mediated apoptosis is an dominant negative mutant of the Fas protein.

7. The method of claim 5 wherein the inhibitor of Fas mediated apoptosis is a dominant negative mutant of the FADD protein.

8. The method of claim 5 wherein the inhibitor of Fas mediated apoptosis is a member of the bcl-2 protein family.

9. A mammalian  $\beta$ -cell comprising a recombinant nucleic acid molecule, said nucleic acid molecule comprising and expressing an inhibitor of IL-1  $\beta$  activity, wherein the expression of the inhibitor of IL-1  $\beta$  activity reduces  $\beta$  cell dysfunction.

10. The  $\beta$ -cell of claim 9 wherein the inhibitor of IL-1  $\beta$  activity is an interleukin-1 receptor antagonist protein.

11. The  $\beta$ -cell of claim 9 wherein the inhibitor of IL-1  $\beta$  is an NF-K $\beta$  inhibitor protein.
12. The  $\beta$ -cell of claim 9 wherein the inhibitor of IL-1  $\beta$  is an insulin like growth factor-1 protein.
13. A recombinant viral vector comprising a nucleic acid molecule encoding an inhibitor of IL-1  $\beta$  activity.
14. The recombinant viral vector of claim 13 wherein the inhibitor of IL-1  $\beta$  is an interleukin-1 receptor antagonist protein.
15. The recombinant viral vector of claim 14 wherein the inhibitor of IL-1 $\beta$  is a NF-k $\beta$  inhibitor.
16. The recombinant viral vector of claim 14 wherein the inhibitor of IL-1 $\beta$  is an insulin like growth factor-1 protein.
17. The recombinant viral vector of claim 14 wherein the recombinant viral vector is

an adenovirus vector.

18. The recombinant viral vector of claim 14 wherein the recombinant viral vector is a lentivirus vector.

19.. The recombinant viral vector of claim 14 wherein the recombinant viral vector is a herpes simplex viral vector.

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